

REMARKS

In response to the Office Action dated June 18, 2003, applicants respectfully request reconsideration and withdrawal of the objections and rejections set forth therein.

The drawings were objected to as not showing the top and bottom alignment layers, and the input and output polarizers. In response thereto, a proposed revision to Figure 1 is being submitted herewith, in which these components of a liquid crystal display are illustrated. The alignment layers are identified with the reference characters 2a and 3a, and the polarizers are labeled with the reference character P. Upon receipt of the Examiner's approval of the proposal, formal drawings including the revised Figure 1 will be submitted, and the specification will be amended to conform to the changes in the figure.

The specification was objected to as failing to provide antecedent basis for the claim terminology of "rubbing directions of the top and bottom alignment layers that favor a twist angle." In addition, claim 1 was rejected under the second paragraph of 35 U.S.C. §112, on the grounds that it was not clear what this phrase defines.

It is respectfully submitted that the concept of defining a twist angle by appropriate selection of rubbing directions is well known in the art. For example, the Examiner is referred to the Leenhouts '947 patent, cited in the Office Action, particularly at column 2, lines 32-37 and column 3, lines 5-16. Generally speaking, it is well understood that one alignment surface has a first rubbing direction, and the other alignment surface has another rubbing direction, and between them they define a twist angle.

It is respectfully submitted that the claim terminology is not indefinite, when it is considered in light of the general level of knowledge of those skilled in the field of liquid

crystal displays. Furthermore, while the exact phrase identified in the Office Action does not explicitly appear in the specification, it is respectfully submitted that the claim terminology has proper antecedent basis. For example, the summary of the invention states that the alignment of the two twist states are given by the rubbing condition that favors a particular twist. Note also page 5, lines 12-14, which refers to alignment layers that align the liquid crystal molecules.

It is to be kept in mind that a patent is directed to those who are skilled in the art, and need not include that which is well known in the art. See, e.g., MPEP §2164.01. In view of the foregoing, it is respectfully submitted that the claim language is not indefinite, and has proper antecedent support in the specification, when considered in light of the level of knowledge in the relevant technology.

Claims 1, 14, 15 and 20 were objected to as containing informalities, and rejected under the second paragraph of 35 U.S.C. §112, as being indefinite. In response thereto, the claims have been reviewed and amended as appropriate to incorporate the Examiner's suggestions and/or otherwise overcome the bases for the objection and rejections.

Claim 1 was rejected under 35 U.S.C. §103, on the grounds that it was considered to be unpatentable over a combination of the teachings of the Leenhouts, Junge et al and Yamamoto et al patents. Claims 14, 15 and 20 were rejected under 35 U.S.C. §103 on the basis of these three references, and further in view of the Sugimura patent.

The present invention is directed to bistable displays, namely displays where there are two stable twist states under zero voltage conditions. See, for example, the statement of the field of the invention, on page 1 of the specification. In the disclosed invention,


these two stable twist states differ in twist angle by 180° . The display can exist in either of these two twist states. See, for example, the summary of the invention on pages 2 and 3 of the application. To clarify this aspect of the invention, claim 1 has been amended to recite a bistable liquid crystal display, in which the rubbing directions between the top and bottom alignment layer define a first stable state, and the ratio of the thickness of the liquid crystal layer and the pitch define a second stable state. See the specification at page 2, lines 22-24.

In contrast, each of the cited references only pertains to a monostable display. It is respectfully submitted that there is no teaching in any of the references which would motivate a person of ordinary skill in the art to combine them in such a manner as to produce a bistable liquid crystal display. Reconsideration and withdrawal of the rejections under 35 U.S.C. §103 are therefore respectfully requested.

In view of the foregoing, it is respectfully submitted that all pending claims are in condition for allowance, and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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